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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,848	11/02/2000	Mats Olsson	45051-00004	4869

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EXAMINER

WIMER, MICHAEL C

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/704,848

Applicant(s)

OLSSON ET AL.

Examiner

Michael C. Wimer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-23 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-12,16/11,16/12,17-19 and 24 is/are rejected.
- 7) ☒ Claim(s) 13-15,16/13,16/14,16/15 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2,4,5,7-11,16/11,17-19 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Pal et al (5572227).

Regarding Claims 1,2,4,5,7-11,16/11,17-19 and 24, Pal et al teach a multiband antenna array antenna for use with portable hand-held radios (col. 1, lines 6-8), comprising a flexible antenna support composed of an insulator sheet 4 of Kapton™, with printed circuit antenna elements 1-3 all resonant in respective bands and covered by a flexible radome 11, all arranged as claimed. The entire antenna including the housing 11 is deemed flexible because of its use on a hand held radio, and by virtue of the thin plastic material used in the substrate 4 and radome 11. The antennas are taught to be operational on L, S and UHF bands, as claimed, but may be frequency-scaled for almost any frequencies of operation (col. 2, lines 42-44). Ground terminals are near the connectors, and coaxial lead-outs are provided for each antenna band.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1,2,4,5,7-12,16/11,16/12,17-19 and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over UK Pat. No. 2322011A (Pal et al) in view of Pal et al (5572227).

Regarding Claims 1,2,4,5,7-12,16/11,16/12,17-19 and 24, Pal et al (UK 2322011) also teaches a multiband antenna array 26,28 mounted on a flexible dielectric substrate 24 and covered by a flexible, plastic housing/radome 42 and mounted on a portable radio 10, with ground portions on the networks 30,32 and fed with coaxial cables 34 and 38. It is obvious to the skilled artisan that the whip antenna formed by the flexible film and radome, combined, provide a flexible whip always desired in a portable transceiver. As to Claim 12, the radio 10 is built with a p.c. board and the cables are connected thereto. Pal et al ('227) is cited teaching the frequency bands recited to be obvious to the skilled artisan.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pal et al. (UK Pat. No. 2322011A) in view of Pal et al. (5572227) as applied to claims 1,4 and 5 above, and further in view of Korisch (5926139).

Korisch is cited to show that an inverted-F antenna is a planar device formed on a substrate. It would have been obvious to the skilled artisan employ such an antenna in the Pal et al devices.

Allowable Subject Matter

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6. Claims 13-15, 16/13, 16/14, 16/15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 20-23 are allowed.

Response to Arguments

8. Applicant's arguments filed 7/03/03 have been fully considered but they are not persuasive. Specifically, applicant's main argument against the anticipation rejection of Pal et al. '227 is that of "flexibility". But yet applicant has provided no specific definition of flexibility, a range of flexure, or has claimed any specific material to provide applicant's desirability of flexure. Applicant has emphasized in the record why Pal et al '227 does not specifically teach a structure that results in a flexible structure. Applicant acknowledges that Kapton™ material is flexible per se. When this thin flexible sheet is rolled to form a tube, why would it not be flexible? No additional support within the hollow tube is provided to stiffen its flexure. Even if there was provided such a support, the resultant structure would still provide some degree of flexure. It cannot be avoided. Flexure is inherent within the structural material of Kapton™. A flexible structure is a relative term. Applicant provides no map or guidance to the amount of flexure desired. Additionally, the radome material used in Pal et al is not described. But, the radome is a protective cover for protecting the etched conductors on the Kapton™ sheet. Flexibility is also inherent in the radome. The resultant structure of Pal et al is flexible. The anticipation rejection stands.

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Regarding applicant's arguments that there is no teaching of "a second antenna adapted for short range supplementary communication in a second frequency band", the highest frequency band of operation certainly fits such a characterization simply because a signal has a shorter range (i.e., microwave frequencies do not propagate as far as a UHF signal because of the "radio horizon" effect).

Regarding applicant's arguments against the obviousness rejection, they are essentially the same as in the anticipation rejection. A skilled artisan would find it obvious that the rolled flexible material and the radome atop it provide some degree of flexure. The antenna can be flexed. Its use in a portable environment is essential for flexing. The design engineer uses materials to provide some degree of flexure of all rod antennas because the user may damage it if it cannot be flexed, to provide some "give" to prevent damage to the feed connection/connector. These principles are basic whip antenna design parameters. A stainless steel whip is flexible. A fiberglass whip is also flexible but not able to be flexed as much as the stainless steel whip. This is an example of degree of flexure. Applicant provides no degree of flexure. Thus, a close examination of the materials used in these prior art references provides the claimed flexible structure, absent any other recitation of material, design parameters, etc., that would obviate such a rejection. The obviousness rejection stands.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wimer whose telephone number is (703) 305-3555. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K. Wong can be reached on (703) 308-4856. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read "Michael C. Wimer", is positioned above the printed name and title.

Michael C. Wimer
Primary Examiner
Art Unit 2821

MCW
02 September 2003